IN THE CLAIMS

Please cancel claims 2, 3, 4, 36, 39-41, 51, and 60-63 without prejudice. Also, please enter the following amended claims 1, 5, 11, 13, 21, 34, 35, 37, 38, 53, and 54 as follows:

A1

1. (Once Amended) A method of monitoring the presence of one or more chromophores in a sample of biological tissue, which method comprises illuminating an area of such tissue sample by projecting light from a light source, receiving light remitted by the illuminated area of tissue at a photo-receptor, spectroscopically analyzing the remitted light, and comparing variations in the intensity and spectral characteristics of the remitted light with respect to the intensity and spectral characteristics of the projected light and with data representing a datum sample of intensity and spectral characteristics of light remitted by a sample of tissue of known structure, and emitting a control signal in response to any such variations.

A2

5. (Once Amended) A method according to claim 1 of deriving data relating to the presence and/or depth and/or concentration of any chromophore selected from the group consisting of: melanin, blood, haemoglobin, oxy-haemoglobin, bilirubin, tattoo pigments and dyestuffs, keratin, collagen and hair.

A3

11. (Once Amended) A method according to claim 1 applied for endoscopic monitoring of the presence of one or more said chromophores in the tissue sample.

13. (Once Amended) A method of non-invasively analyzing structure, comprising the steps of:

A4

(i) measuring red or infrared radiation from at least one location in an area of tissue under investigation so as to give an indication of any layered structure in said area;

(ii) measuring the tissue color co-ordinates at said at least one location in said area of tissue;

(iii) using data obtained in measuring steps (i) and (ii) to calculate corrected tissue color co-ordinates in respect of said area which corresponds to a predetermined thickness of said layered structure, and;

(iv) comparing the corrected tissue color co-ordinates obtained in step (iii) with a reference color co-ordinate range for healthy tissue having a known layered structure of the same predetermined thickness.

21. (Once Amended) A method according to claim 18, wherein said calibration in step (vi) includes estimating the level of epidermal melanin levels calculated within at least one normal skin region adjacent said location.

34. (Once Amended) A method of mapping the papillary surface of an area of the dermis which comprises illuminating the surface of the skin over that area with light and monitoring the intensity of light remitted from along at least one line or sequence of points, the light having a wavelength sufficiently far into the infrared that its absorption by melanin and blood is negligible, and deriving therefrom a theoretical intensity of remitted light which is independent of the presence of melanin or blood, and from the remitted light intensity deriving a signal corresponding to the concentration of collagen within the papillary dermis which includes at least one of a line, a point, and a combination thereof, and producing a contoured image in which the apparent elevation of any point is dependent upon the strength of such signal.

35. (Once Amended) Apparatus for monitoring the presence of one or more chromophores in a biological tissue sample, which apparatus comprises a light source for projecting light to illuminate an area of such tissue sample, a photo-receptor for receiving light remitted by the illuminated area of tissue, and a spectroscopic analyzer for monitoring the remitted light, a comparator for comparing variations in the intensity and spectral characteristics of the remitted light with respect to the intensity and spectral characteristics of the projected light at different wavelengths and with data representing a datum sample of intensity and spectral characteristics of light remitted by a reference sample of tissue of known structure and a signal emitter for emitting a control signal in response to any such variations.

37. (Once Amended) Apparatus according to claim 35, wherein said datum sample is a datum sample of intensity and spectral characteristics of light remitted by a reference sample of skin.

38. (Once Amended) Apparatus according to claim 35, wherein said datum sample is a datum sample of the intensity and spectral characteristics of light remitted by a reference sample of normal healthy tissue.

53. (Once Amended) Apparatus for non-invasively analyzing skin structure, comprising: means for projecting UV and/or visible and/or red and/or infrared radiation onto an area of skin under investigation, measuring means for measuring remitted red or infrared radiation from at least one location over said area of skin so as to give an indication of the collagen thickness in said area; skin color coordinate measuring means for measuring the skin color coordinates at said at least one location in said area of skin; calculating means for using data obtained in measuring steps (i) and (ii) to calculate corrected skin color coordinates in respect of the or at least one said area which corresponds to a predetermined amount of collagen, and; color comparison means for comparing the corrected skin color coordinates obtained in step (iii) with a reference color coordinate range for skin of known structure with the same collagen content.

54. (Once Amended) Apparatus for mapping the papillary surface of an area of the dermis which comprises a light source illuminating the surface of the skin over that area with light which has a wavelength sufficiently far into the infrared that its absorption by melanin and blood is negligible, means for monitoring the intensity of the light remitted along at least one line or sequence of points, and deriving therefrom an intensity or theoretical intensity of remitted light which is independent of the presence of melanin or blood, and means for deriving a signal from the remitted light intensity corresponding to the concentration of collagen within the papillary dermis along the or each line or at each point, and for producing a contoured image in which the apparent elevation of any point is dependent upon the strength of such signal.

Please add the following new claims 64 and 65:

64. A method of mapping the papillary surface of an area of the dermis which comprises illuminating the surface of the skin over that area with light and monitoring the intensity of light remitted from along at least one line or sequence of points, the light having at least two wavelengths of which at least one is in excess of 600nm and deriving therefrom a theoretical intensity of remitted light which is independent of the presence of melanin or blood, and from the remitted light intensity deriving a signal corresponding to the concentration of collagen

within the papillary dermis along the or each line or at each point, and producing a contoured image in which the apparent elevation of any point is dependent upon the strength of such signal.

65. Apparatus for mapping the papillary surface of an area of the dermis which comprises a light source illuminating the surface of the skin over that area with light which has at least two wavelengths of which at least one is in excess of 600 nm, means for monitoring the intensity of the light remitted along at least one line or sequence of points, and deriving therefrom an intensity or theoretical intensity of remitted light which is independent of the presence of melanin or blood, and means for deriving a signal from the remitted light intensity corresponding to the concentration of collagen within the papillary dermis along the or each line or at each point, and for producing a contoured image in which the apparent elevation of any point is dependent upon the strength of such signal.